

(12) UK Patent Application (19) GB (11) 2 308 527 (13) A

(43) Date of A Publication 25.06.1997

(21) Application No 9525862.0

(22) Date of Filing 19.12.1995

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(51) INT CL⁶
G08G 1/017

(52) UK CL (Edition O)
H4L LACX

(56) Documents Cited

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WO 94/08820 A1 US 5264854 A US 4303904 A

(58) Field of Search
On-Line - WPI

(54) Vehicle borne transponder device

(57) The invention relates to an information storage/accessing system for use in conjunction with a vehicle. Said system comprises an information storage device for use on or in a vehicle, a transmitter for transmitting said information upon activation of a remote portable hand held detector. The information comprises tax vehicle details, MOT details, insurance details, name, address and postcode of a named driver, registration details, chassis number, colour, size, engine size, license details, endorsement details and represents a system which can eliminate vehicle tax evasion. May be used by police in conjunction with traffic/speed monitoring equipment. Ideally situated in a location where it may also be visually inspected. System is advantageously not susceptible to fraud, cannot be counterfeited, and additionally it reduces the time required for vehicle identification by providing prompt automatically presented details to a requestee.

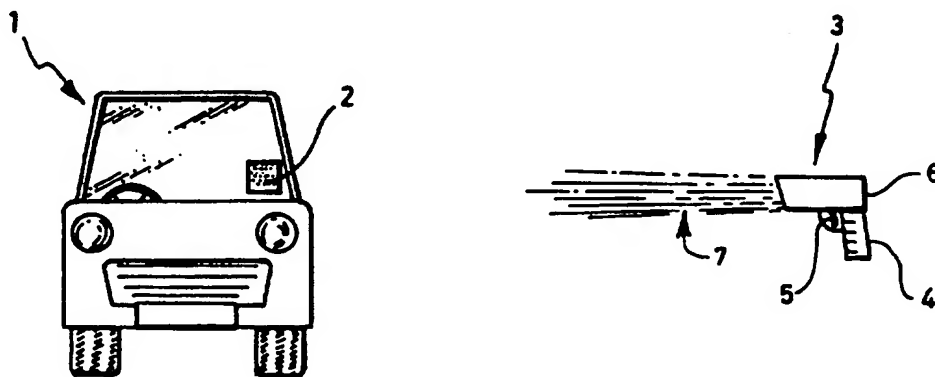


Fig. 1

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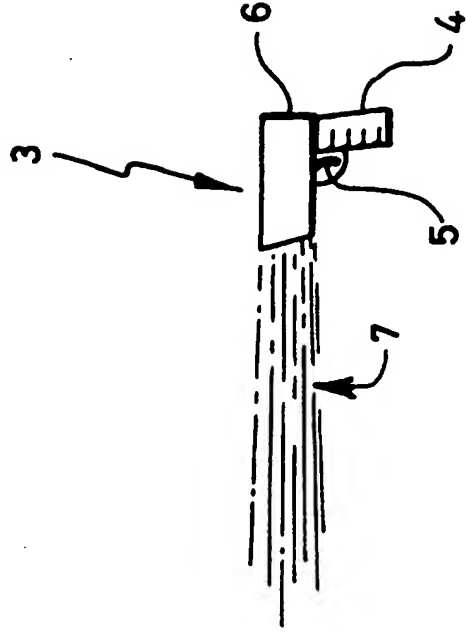
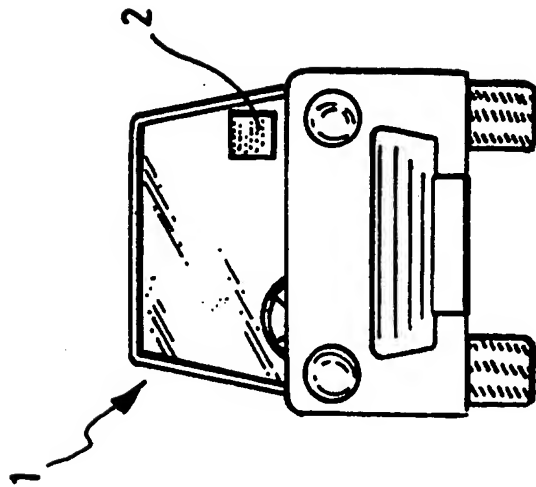


Fig. 1

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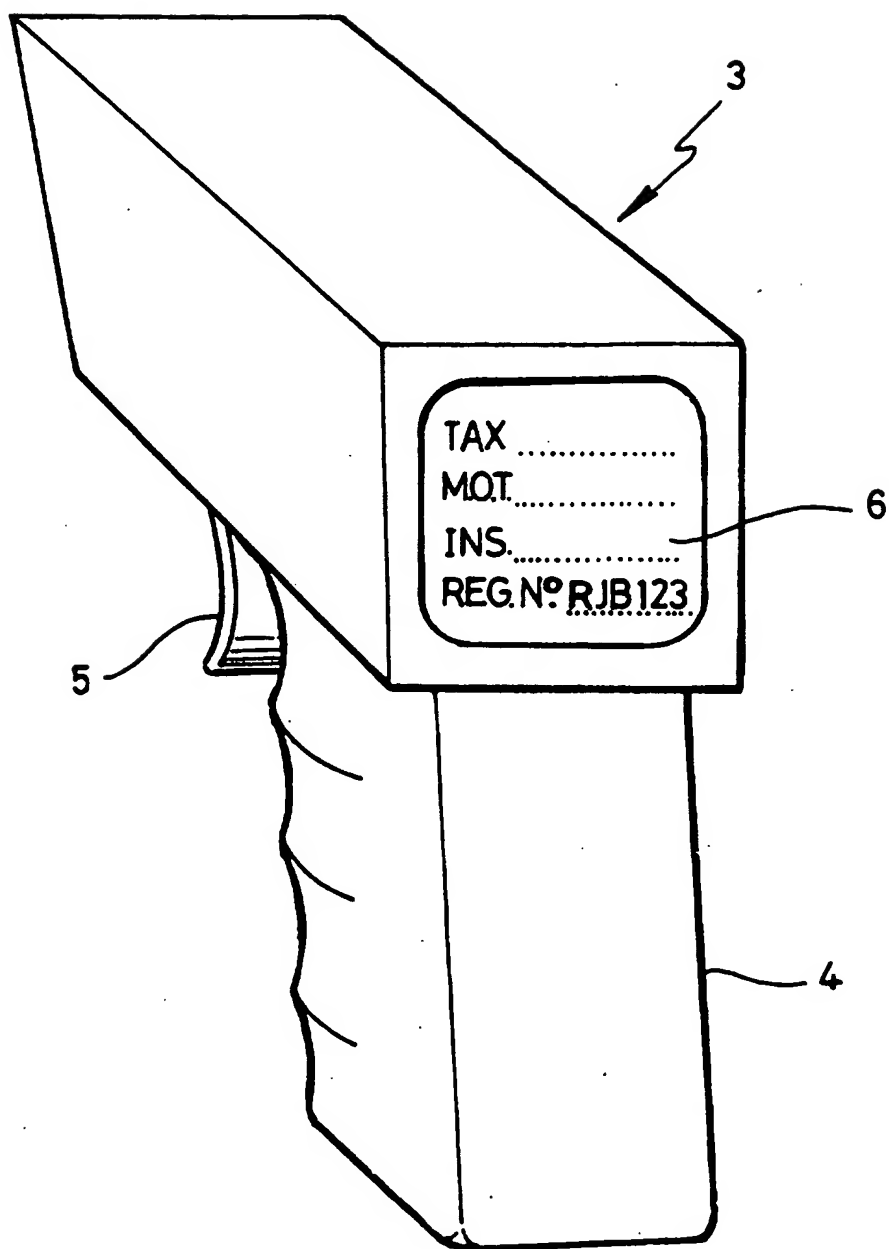


Fig. 2

INFORMATION STORAGE/ACCESSING SYSTEM**Field of Invention**

The invention relates to information storage/accessing systems and aspects thereof, and particularly but not exclusively, to information storage/accessing systems for use in conjunction with a vehicle.

Background and Prior Art

Historically, it has been a legal requirement for drivers of road-using vehicles to display a vehicle's road tax details in a prominent position on the vehicle to facilitate inspection. Typically these tax details are placed in the off-side region of the windscreen, and comprise the familiar "tax disc". The tax disc typically records, amongst other things, the date of expiry of the vehicle's road tax, the location at which the tax disc was renewed, which is usually represented by a suitable frank, and the registration number of the vehicle. It is a requirement of the vehicle road tax system at least in the UK that every vehicle which uses roads must be taxed separately. So for example, if a person owns a number of vehicles which are used only occasionally, each vehicle must be taxed separately.

However, as will be appreciated, in line with other systems of taxation, there needs to be an effective method of policing the road tax system to prevent tax evasion, and generally it is the responsibility of traffic wardens to police the system.

Problems with the Prior Art

The problem of road tax evasion occurs in a variety of forms.

For example, road tax evasion may be purely innocent in that a person may have simply forgotten to renew the road tax.

- 5 Alternatively, road tax evasion may be due to wilful intent to avoid payment. This form of tax evasion can be further divided into two groups.

10 Firstly, there are those persons who knowingly take the risk of not paying the road tax, instead choosing simply to leave the previous tax disc on the car. Persons who take this risk are generally aware that the likelihood of their tax evasion being detected is relatively and increasingly small as the volume of road-traffic increases.

Secondly, there are those persons who evade paying road tax through deception. Tax deception or fraud occurs in many forms.

15 For example, it is commonplace for unscrupulous persons to transfer tax discs between several vehicles. This is commonplace because the registration details of a vehicle may be difficult to read from the tax disc and therefore such tax evasion is difficult to detect. For example, generally the registration details are hand written, and may be illegible. Also it may occur that the frank which date-stamps the tax disc, may partially obscure the registration details, or the registration details may have been bleached by strong sunlight.

20 Alternatively, the internal and/or external surfaces of the windscreen may be dirty.

A further example of deception is the use of counterfeit tax discs. This occurrence is becoming more commonplace with the advent of colour photocopying technology.

5 It will therefore be appreciated that tax evasion is a widespread problem resulting in significant losses in tax revenue to central government. It is a particular problem with the prior art that with the present tax disc system it is easy to defraud the vehicle road tax system. This is due to three main reasons:

- 10 a) the increasing volume of traffic makes it impossible to comprehensively check the tax details on all vehicles;
- b) tax discs can be swapped between vehicles; and
- c) tax discs are becoming easier to counterfeit.

15 It is a further problem with the current vehicle road tax system that inspection of a vehicle's road tax details consumes a significant amount of a traffic warden's time, which time could be used for other important duties.

Object

It is therefore an object of the invention to eliminate vehicle tax evasion.

In particular, it is an object of the invention to provide a vehicle road-tax system which is not susceptible to fraud by:

- a) providing a system to check the details on the majority of vehicles;
- b) providing a system which cannot be transferred between vehicles; and
- c) providing a system which cannot be counterfeited.

5 It is also an object of the invention to provide a system which can be inspected without consuming large amounts of a traffic warden's time, and preferably consumes none of a warden's time. Ideally, it is an object to provide an inspection system which is automatic, by not requiring any manual inspection.

10 It is also an object of the invention to provide a system which will enable inspection of a vehicle's tax details and also other information pertaining to the vehicle, such as insurance details, MOT details etc.

15 Statistics show that the problem of vehicle theft is becoming more commonplace. Accordingly solving car crime and, in particular, recovery of a stolen vehicle is consuming increasing amounts of police time, which time could be put to other uses. Currently recovery of stolen vehicles is a random process, which relies on the policeman/woman firstly identifying a vehicle which may have been stolen and reporting the vehicle's details to a police station where the vehicle's details are checked against reports of stolen vehicles.

20 The success of this system depends on the policeman/woman fortuitously being in the right place at the right time during the course of normal duties. It will be appreciated that this system is not an efficient way of recovering

stolen cars.

It is therefore an object of the invention to provide a system which can automatically detect and rapidly identify stolen cars.

5 It is a further object of the invention to provide a system which is easy to administer and reduces paperwork.

It is a further object of the invention to provide a system which is inexpensive and convenient.

Statement of Invention

10 In its broadest aspect there is provided a vehicle information storage/accessing system adapted such that stored information can be accessed remotely from said vehicle.

According to the invention there is provided a vehicle information storage/accessing system comprising;

15 a) at least one information storage device for use on or in a vehicle consisting of:

i) a storage facility for storing information, particularly that relating to said vehicle;

ii) a detector adapted to detect and respond to an interrogation signal for the purpose of releasing at least a part of said information;

and

iii) a transmitter for transmitting said part of said information upon activation of said detector.

b) at least one remote information accessing device consisting of:

5 i) a transmitter for sending interrogation signals to said detector;

ii) a receiver for receiving said transmitted information; and

iii) a presentation means for presenting said transmitted information to a user.

10 It will be appreciated that said information storage device can be situated at any position on or in a vehicle provided said information can be accessed. Preferably said information storage device is situated where it can be visually inspected by a traffic warden.

15 In a preferred embodiment said information is stored as a barcode, or on an electronic chip, or by any other means of storing information which can be accessed using electromagnetic radiation, such as radiowaves etc.

20 In a preferred embodiment the storage facility is adapted to store information, particularly that information relating to said vehicle. Ideally this information includes the vehicle's tax information, however it is intended that said storage facility stores MOT details, insurance details, name, address and post code of main driver, registration details, chassis number, colour, engine size, licence

details, endorsement details etc.

In a further preferred embodiment said information storage facility can be updated readily. Ideally said storage facility is portable, enabling said information to be updated at a suitable updating station.

- 5 Preferably said detector responds only to predefined interrogation signals or said detector responds to interrogating signals from selected information accessing device(s). Ideally said interrogating signals and/or said transmitted information are encrypted.

- 10 In a preferred embodiment said interrogating signal comprises electromagnetic radiation, ideally radiowaves.

In a preferred embodiment said transmitted signal comprises electromagnetic radiation, ideally radiowaves.

In a preferred embodiment said remote information accessing device is portable, and ideally handheld.

- 15 In a further preferred embodiment said remote information accessing device is situated in a police car.

In a preferred embodiment said remote information accessing device can be used in conjunction with a vehicle speed detection device and/or a surveillance camera.

- 20 In a further preferred embodiment said transmitter and said receiver of said

remote information accessing device are adapted to be fixed at a suitable position, for example by the side of a road, and said presentation means is situated at a suitable monitoring station.

5 Further embodiments of the invention will now be described, by way of example only, with reference to the following figures wherein,

Figure 1 shows a schematic view of the information storage device and the remote accessing device according to the invention.

Figure 2 shows a perspective view of the remote accessing device according to the invention.

10 Referring to Figure 1 there is shown vehicle 1 which vehicle has an information storage device 2 positioned on the off-side, lower part of the windscreen. Figure 1 also shows information accessing device 3 positioned at a remote distance from storage device 2.

15 Storage device 2 is shown in a prominent position on the windscreen of a car, and in this preferred embodiment storage device 2 also contains printed information which printed information can be read by the driver of vehicle 1 or visually inspected by an inspector.

20 It should be understood however that it is not intended to limit storage device 2 to this embodiment. It will be appreciated that the storage device could be positioned at any position on a vehicle where said storage device can detect an interrogation signal from, and transmit information to, an information accessing device.

The information accessing device 3 shown in Figure 1 is adapted to be handheld, and comprises an accessing gun. In this embodiment, the accessing device 3 includes handle 4, trigger 5, screen 6 and transmitting region 7.

5 In use, an operator positioned at a distance remote from vehicle 1 but within interrogation/transmitting range, points said accessing device 3 at said storage device 2. Said storage device 2 is interrogated by operating trigger 5. It will be appreciated that the invention should not be limited to trigger 5 but is intended to include any operating means, such as a button, voice activation etc.

10 Operating trigger 5 causes the emission of electromagnetic radiation from transmitting region 7, which radiation interrogates a detector on said storage device 2, which detector responds by releasing information stored on said storage facility. It is intended that said information storage device only transmits information when interrogated by specific accessing devices. In
15 addition or alternatively it is intended that the detector only responds when a preselected interrogating signal is received. In this latter embodiment and others it is envisaged that said signal is an encrypted signal.

On receipt of a correct interrogating signal, the detector releases said information, ideally encrypted, enabling it to be transmitted from said storage
20 device. In this embodiment said received information is displayed on a visual screen 6 at the rear of said accessing device.

Figure 2 shows a perspective view of an information accessing device, showing the visual screen 6 at the rear of said accessing device. In this embodiment, the tax, MOT and insurance details of a vehicle are displayed

on visual screen 6, however it will be appreciated that any combination of information relating to vehicle can be accessed provided said information is stored on said storage device.

5 It will be understood that the above embodiment describes a handheld device, however it is not intended to limit the scope of protection solely to handheld information storage/accessing systems. Other envisaged applications would include an information accessing device which comprises a transmitter and receiver fixed at the side of a road and a presentation means situated at a control station.

10 Alternatively, it is envisaged that the information accessing device would find use in conjunction with any of the current remote electronic policing methods, such as speed detection devices and remote cameras.

Therefore, there is provided a vehicle storage/accessing system adapted such that stored information can be accessed remotely from a vehicle.

CLAIMS

1. A vehicle information storage/accessing system comprising;
 - a) at least one information storage device for use on or in a vehicle consisting of:
 - 5 i) a storage facility for storing information, particularly that relating to said vehicle;
 - ii) a detector adapted to detect and respond to an interrogation signal for the purpose of releasing at least a part of said information; and
 - 10 iii) a transmitter for transmitting said part of said information upon activation of said detector.
 - b) at least one remote information accessing device consisting of:
 - i) a transmitter for sending interrogation signals to said detector;
 - ii) a receiver for receiving said transmitted information; and
 - 15 iii) a presentation means for presenting said transmitted information to a user.
2. A vehicle information storage/accessing system according to claim 1 wherein said information storage device is situated where it can be visually

inspected by an individual.

3. An information storage system according to claim 1 or 2 wherein said information storage device is adapted so that information is stored using means of storing information which can be accessed using electromagnetic radiation.

4. An information storage system according to any preceding claim wherein said information storage device is adapted to store information relating to said vehicle.

5. An information storage system according to claims 1 to 4 wherein said information storage device stores information relating to the vehicle's owner.

6. An information storage system according to any preceding claim wherein said information storage device is adapted to be readily updated.

7. An information storage system according to any preceding claim wherein said information storage device is portable.

8. An information storage system according to claim 1 wherein said detector responds to predefined interrogation signals.

9. An information storage system according to claim 8 wherein said detector responds to interrogating signals from selected information accessing device(s).

10. An information storage system according to any preceding claim

wherein said interrogating signal(s) and/or said transmitted information is encrypted.

11. An information storage system according to claim 1 wherein said interrogating signal comprises electromagnetic radiation.

5 12. An information storage system according to claim 10 wherein said electromagnetic radiation comprises radiowaves.

13. An information storage system according to any preceding claim wherein said transmitted signal comprises electromagnetic radiation.

10 14. An information storage system according to claim 13 wherein said electromagnetic radiation comprises radiowaves.

15. An information storage system according to any preceding claim wherein a remote information accessing device is portable.

16. An information storage system according to claim 15 wherein said remote information accessing device is hand held.

15 17. An information storage system according to any preceding claim wherein said remote information accessing device is situated in a police car.

18. An information storage system according to any preceding claim wherein said remote information accessing device is adapted for use in conjunction with a vehicle speed detection device and/or a surveillance camera.
20

19. An information storage system according to claim 1 wherein said transmitter and said receiver of said remote information accessing device are adapted to be positioned at a suitable location and said presentation means is adapted to be positioned at a suitable location remote therefrom.



Application No: GB 9525862.0
Claims searched: 1 to 19

Examiner: Mr Jared Stokes
Date of search: 27 February 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O):

Int Cl (Ed.6):

Other: On-Line - WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	EP 0 602 920 A1 (Exxon) Whole document	1,3,4,6,8,9, 11-14,19
X	EP 0 401 192 A1 (Thierry) Whole document	1,3-6, 8-14,19
X	WO 95/11501 A1 (Brandenburg) Whole document	1,3,4,8-16
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X	US 5 264 854 (Spiess) Whole document	1,3-14,18
X	US 4 303 904 (Chasek) Whole document	1-14

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Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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